UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF GEORGIA
GAINESVILLE DIVISION

Santana Bryson and Joshua Bryson, as Administrators of the Estate of C.Z.B., and as surviving parents of C.Z.B., a deceased minor,	*	
Plaintiffs,	*	Civil Action File
v.	*	No. 2:22-cv-17-RWS
Rough Country, LLC	*	
Defendant.	*	

PLAINTIFFS' *DAUBERT* MOTION TO EXCLUDE DEFENDANT'S UNREPRESENTATIVE CRASH TEST

I. INTRODUCTION

Rough Country ("RC") could not find a single expert to testify that its lift kit was safe—it *literally* could not pay someone to defend its product. That is no surprise: even auto manufacturers agree this design is dangerous and voluntarily agreed (without regulation) to keep it off the road. Instead of accepting liability for the death it caused, RC argues that the Brysons' two-year old son would have died in the collision regardless of whether the F-250 had a RC lift kit installed.

RC's support for that claim is a made-for-litigation crash test that Exponent, Inc. ran in this case in May 2023.[1] Exponent was founded to defend large manufacturers in product liability suits like this one. Over the years, Exponent has authored numerous "studies" on behalf of large corporations. Its "studies" have concluded that second-hand smoke from tobacco does not cause cancer, asbestos is not harmful, and the Deepwater Horizon spill did not damage coral reefs.[2] David Michaels, former assistant U.S. Secretary of Labor for Occupational Safety and Health stated, "[w]hile some might exist, I have yet to see an Exponent study that does not support the conclusion needed by the corporation or trade association that is paying the bill."[3]

RC's accident reconstructionist, Wesley Grimes, used the Exponent test to opine that the crush and force in the subject crash would have been the same with or without the RC lift.[4] Using a crash test to predict what would have happened in

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[1] Rough Country has several experts, but none on defect. *See generally* 3/29/24 RC's Supp. Initial Disclosures.
[2] *See* Myron Levin and Paul Feldman, *Big Companies in Legal Scrapes Turn to Science-for-Hire Giant Exponent*, Business Ethics (12/13/16), *available at* http://indepthnh.org/2016/12/13/big-companies-in-legal-scrapes-turn-to-science-for-hire-giant-exponent/.
[3] *See* David Michaels, Doubt is Their Product (Oxford Univ. Press 2008).
[4] *See* Ex. 1, Grimes Report, at 34 ("the deformation and accelerations of the Escape would have been substantially similar whether the F-250 was lifted or was equipped with a stock suspension").

the Brysons' crash requires matching the variables such as speeds, angles, offsets, and weights of the vehicles to the subject crash. Even Mr. Grimes admits that.[5]

But in addition to changing whether the F-250 had a lift kit installed, Exponent changed four additional variables, each of which directly impacts what its crash test purports to study, i.e., the amount of intrusion into the Ford Escape. Exponent's crash test (1) had 45 percent more offset[6] between the two vehicles, (2) used a Ford Escape with different structural characteristics, (3) was conducted without accounting for the braking that its expert admits occurred in the subject wreck, and (4) contained different cargo than the subject collision.

The differences between the subject collision and Exponent's crash test are dramatic. The five additional inches of offset, according to RC's ***own expert***, would be enough to skew the results of the crash test.[7] The first three variables Exponent changed in the crash test tend to *increase* the amount of intrusion into the Ford Escape. In other words, the ways in which Exponent made the crash dissimilar from the subject wreck are factors that skew the results of the test in

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[5] *See* Ex. 2, Grimes Dep., at 172:13-18 (testifying the crash test must match the variables in subject crash to allow him to draw a conclusion about the subject crash).

[6] "Offset" refers to the distance between the center lines of the two crashed vehicles.

[7] *See* Ex. 2, Grimes Dep., at 184:18-185:1 (testifying that five or six inches of offset could make affect the outcome of the crash test).

RC's favor. RC's experts claim the fourth dissimilar variable—its failure to include cargo items in the test vehicle—also had a huge impact the outcome of the test.[8]

Plaintiffs move to prevent any of RC's experts from testifying about Exponent's May 2023 crash test or using it to support their opinions because (1) RC cannot meet its burden to prove the test "fits" the facts of the case under Rules 702, 402, and *Daubert* since it changed several variables, and (2) under Rule 403, any probative value RC can articulate is vastly outweighed by the risk of unfair prejudice and likelihood of misleading the jury.

II. LEGAL STANDARD

To be admissible, evidence introduced through experts must "help the trier of fact to understand the evidence or to determine a fact in issue." Fed. R. Evid. 702(a). "The consideration has been aptly described . . . as one of 'fit.'" *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 591 (1993). "Fit" means that the purportedly scientific testimony must have a "valid scientific connection to the pertinent inquiry." *Allison v. McGhan Med. Corp.*, 184 F.3d 1300, 1312 (11th Cir. 1999) (citing *Daubert*, 509 U.S. at 592). The standard for "fit," or connection to the pertinent inquiry, is "higher than bare relevance." *Lee v. Smith & Wesson*

[8] *See supra* Section III.A.(3).

Corp., 760 F.3d 523, 529 n.1 (6th Cir. 2014). An expert's opinion that does not "fit" should be excluded. *Daubert*, 509 U.S. at 591, 593.

As the party seeking to introduce the expert testimony, RC *bears the burden of demonstrating that the testimony fits the facts of the case*, and the Court's exclusion of expert testimony will be affirmed absent an abuse of discretion or a "manifest" error. *Daubert*, 509 U.S. at 597; *Chapman v. Procter & Gamble Distrib., LLC*, 766 F.3d 1296, 1308 (11th Cir. 2014).

Tests and experiments can mislead the jury when "the demonstration resembles the disputed accident" but does not meet the "substantial similarity" requirement. *Muth v. Ford Motor Co.*, 461 F.3d 557, 566 (5th Cir. 2006); *United States v. Gaskell*, 985 F.2d 1056, 1060 n.1 (11th Cir. 1993). This is because crash tests and other experiments performed without sufficient similarity to the conditions they attempt to replicate pose "the danger of misleading members of the jury who may attach exaggerated significance to the test." *Barnes v. Gen. Motors Corp.*, 547 F.2d 275, 277 (5th Cir. 1977).[9]

As a result, 'tests' are inadmissible unless the conditions are "so nearly the same in substantial particulars as to afford a fair comparison in respect to the

[9] Decisions of the former Fifth Circuit issued prior to the close of business on September 30, 1981 "shall be binding as precedent in the Eleventh Circuit." *Bonner v. City of Prichard*, 661 F.2d 1206, 1207 (11th Cir. 1981).

particular issue to which the test is directed." *Burchfield v. CSX Transp., Inc.*, 636 F.3d 1330, 1336-37 (11th Cir. 2011) (holding that substantial similarity requirement applied where "[t]he results of the experiment purported to coincide with [CSX's] theory of how the accident occurred" (quotation and citation omitted)); *see also Gaskell*, 985 F.2d at 1060; *Barnes*, 547 F.2d at 277.

III. ARGUMENT

Both Plaintiffs' experts and RC's experts agree that a crash test must isolate a single variable to produce scientifically valid results related to that variable.[10] However, Exponent's crash test makes it impossible to isolate that variable—in addition to the presence of the lift kit, the crash test significantly altered the lateral offset, vehicle structures, trunk cargo, braking, and speed from those present in the subject collision.

A. Exponent's crash test does not "fit" the facts of this case and is not substantially similar to the subject collision

1. Exponent's crash test had more lateral offset than the subject collision.

Exponent's crash test had 5 inches more lateral offset than the subject

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[10] *See* Ex. 2, Grimes Dep., at 173:2-15; *see also* Ex. 3, Gwin Dep., at 9:23-13:13; Ex. 4, Buchner Rebuttal Report, at 3 ("[I]n science to state the effect of changing one variable (the presence vs non presence of a lift kit) only the lift kit variable can be allowed to change in the two tests."); Ex. 2, Grimes Dep., at 171:16-172:7 (the goal of the test was to isolate the effect of the lift on intrusion).

collision. This additional offset skewed the test results *in RC's favor* by making it easier for the crash test F-250 to intrude into the rear of the Ford Escape than it was in the subject collision.

Exponent's test *was supposed* to crash the vehicles with an offset of 10.9 inches.[11] However, RC's experts did not know the amount of offset *actually present* in their crash test.[12] Neither the Exponent employee who ran the May 2023 test nor RC's accident reconstructionist (Grimes) who relied on it measured this variable.[13] There is a simple way to record the amount of offset that occurs in a crash test, and RC's expert, Exponent employee Charles Crosby, described it: "a marker pin on the front of the vehicle" is "set up pointing at a target and the target gives you a window that that marker pin has to be in in order for that to be considered a successful test."[14]

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[11] *See* Ex. 5, Exponent Crash Test Report, at 4 ("Test Description"). *See also* Ex. 2, Grimes Dep., at 184:13-17 ("Q: Why did you decide to set up the crash test with the same amount of offset as there was in the subject collision? A: Because we're exploring intrusion into the rear occupant compartment.").

[12] *See* Ex. 2, Grimes Dep., at 188:7-14; 213:2-6. Although Mr. Crosby performed some "quick estimates" of the "approximate" offset, he did not perform a detailed measurement or analysis of the amount of offset present in the crash test he ran. *See* Ex. 6, Crosby Dep., at 48:7-49:21.

[13] Ex. 2, Grimes Dep., at 184:18-185:1.

[14] Ex. 6, Crosby Dep. 71:11-21.

A "marker pin" allows an observer to see where the impact occurred and see if the vehicle hit its mark so that everyone knows if it was a "successful test." *There would be no possible question about the amount of offset if RC and its experts had done this*. But Exponent did not use that—or any other—method for recording offset.[15]

As a result, Plaintiffs' experts had to determine the difference between the offset in the crash test and subject collision. Plaintiffs' experts used four independent methodologies to determine the amount of actual offset in the crash test, all of which confirm Exponent's crash test had 5 inches ± 1 inch of *additional* offset from the subject collision.

First, Mr. Buchner used a photo model to compare the locations of the "Ford" logo imprint that the F-250 left on the Escape in both collisions.[16] In both the subject collision and the crash test, the front of the F-250 left a clearly defined "Ford" logo imprinted on the rear of the Escape.[17] By comparing the distance between the Escape's centerline and the edge of the "Ford" logo in both collisions,

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[15] *Id.*

[16] *See* Ex. 4, Buchner Rebuttal Report, at 5-7; *see also* Ex. 7, Buchner Offset PowerPoint.

[17] For an abbreviated version of the photographs showing the "Ford" logo imprints, see Appendix A. For Mr. Buchner's detailed power point demonstrating his work, see Ex. 7, at BRYSON009450-56.

Mr. Buchner determined the lateral offset between the two vehicles was 4.7 inches greater in the crash test than in the subject collision.[18]

Second, Mr. Buchner confirmed that result by using photogrammetry software to account for different camera angles.[19] Mr. Buchner used PhotoModeler Premium software to correlate 2D images with a 3D scan of the vehicles. Using that data, Mr. Buchner performed the same comparison of the "Ford" logo imprint on the subject Escape and test Escape while controlling for the camera angle in both images. With that methodology, Mr. Buchner determined the crash test had 4.9 inches of additional offset than the subject collision.

Third, Mr. Buchner used an overhead video of the crash test to determine that the vehicles were not properly aligned at impact. Mr. Buchner measured a scaled version of the top-down image at the moment of first contact in the crash test.[20] By accounting for the camera angle and measuring the distance between the center lines of the F-250 and Escape at that moment, Mr. Buchner confirmed the crash test had between 4.1 and 6.1 inches of additional offset than in the subject collision.[21] Even RC's expert had to agree the crash test F-250 was not properly

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[18] *See* Ex. 4, Buchner Rebuttal Report, at 5-7.
[19] *Id.* at 8; *see also* Ex. 7, at BRYSON009457-59.
[20] *See* Ex. 4, Buchner Rebuttal Report, at 8-9; *see also* Ex. 7, at BRYSON009465-70.
[21] *Id.*

aligned with the center of the track when he was shown a top-down image from the moment before impact in Exponent's crash test.[22]

Fourth, Mr. Roche, an expert in vehicle structures who worked for automotive manufacturers for decades, compared the post-collision damage to the right liftgate pillar on the subject Escape and crash test Escape. The right liftgate pillar in the subject Escape exhibited deformation consistent with *direct* contact from the F-250.[23] Because the May 2023 crash test had a lateral offset further to the left, the right liftgate pillar in the crash test Escape had only *non-direct* damage.[24] Based on the deformation pattern of the liftgate and the width of the liftgate structure, Mr. Roche confirmed the crash test had *a minimum* of four inches of additional offset compared to the subject collision.[25]

Running a crash test with more offset than the subject collision causes *more* intrusion. The Court does not have to rely just on Plaintiffs experts for this fact.[26]

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[22] *See* Ex. 8, (still image showing the center line of the F-250 was not aligned with the center line of the track); *see also* Ex. 2, Grimes Dep., at 212:8-11 ("Q: Do you agree that the F-250's center line is not aligned with the center line of the track? A: From this perspective, I would agree with that."); *id.* at 188:7-14 (the intent was for the F-250's center line to be aligned with the center line of the track at impact).
[23] *See* Ex. 9, Roche Rebuttal Report, at BRYSON009383.
[24] *Id.*
[25] *Id.* at BRYSON009386.
[26] Ex. 4, Buchner Rebuttal Report, at 5 ("Since the test F250 hit to the left of the accident location, there was less width of the test Escape available to resist the test F250 and therefore the resulting test Escape crush would have been amplified); Ex.

RC's ***own expert*** agreed, testifying:

> Q: Could the amount of offset potentially impact the characteristics of the collision?
> A: Sure. I don't think little changes I think like Mr. Buchner says it's about 12 inches. I'm not going to argue about an inch. You know, **I think five or six inches, eight inches, yeah that could make a difference**, but I think half an inch, an inch, I'm not going to argue about that.[27]

By increasing the offset by five inches, Exponent introduced **45 percent more** offset than was present in the subject collision.[28] That renders the test dissimilar to the subject crash in a way that is so meaningful, even the defense expert must admit it.

The reason RC's experts tried to match the offset in the crash test is to allow them to draw their core conclusions about "the intrusion into the rear occupant compartment" that would have occurred in the subject crash, but for the lift.[29] The increased offset in Exponent's crash test alone prevents anyone from drawing such a conclusion and requires exclusion of the test. *See Burchfield*, 636 F.3d at 1336-37 (to be admissible, experiments "must be so nearly the same in substantial

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9, Roche Rebuttal Report, at BRYSON009386 ("Less lateral engagement results in the impact being concentrated on a smaller area of the Escape.").
[27] *See* Ex. 2, Grimes Dep., at 185:2-187:2 (emphasis added).
[28] *See* Ex. 10, Buchner Rebuttal Dep., at 220:11-17.
[29] *See* Ex. 2, Grimes Dep., at 184:13-17.

particulars as to afford a fair comparison in respect to the particular issue to which the test is directed").

2. Exponent's crash test used a Ford Escape with significantly different structural features.

The truth is that RC did not want to conduct a crash test that isolated the effect of the lift. That fact is most clearly illustrated by the fact that Exponent performed its test on a vehicle with a structure different than the Bryson's vehicle. Despite the Bryson family's Ford Escape having a sunroof, Exponent performed its crash test on a Ford Escape without a sunroof.[30] Even worse, before the May 2023 crash test, Exponent **had already purchased a Ford Escape with a sunroof for the RC crash test**. But it left the similar vehicle in storage while it conducted a crash test on a dissimilar vehicle.[31]

RC's own experts admit—as they must—that using vehicles with different structural characteristics can change the results of a crash test.[32] They also admit they did nothing to determine what effect the sunroof had on the strength of the test

[30] *Id.* at 178:5-11 ("Q: Do you agree that the Escape used in the crash test did not have a sunroof? A: Yes. Q: Did you do anything to determine what effect the sunroof has on the strength of the Escape's structure? A: No.").
[31] *See* Ex. 11, Vehicles "As Received" Report; *see also* Ex. 6, Crosby Dep., at 91:4-12.
[32] *See* Ex. 2, Grimes Dep., at 176:11-25.

vehicle's structure.[33] But the unrebutted evidence proves the presence of a sunroof can result in a *stronger* structure—and a vehicle without a sunroof can have a *weaker* structure that allows *greater* intrusion. Mr. Roche, an expert hired by Plaintiff, is the only structural engineering expert in this case. He worked for auto manufacturers and actually helped design the structure of vehicles. Mr. Roche explained that "body structures designed for a sunroof have an additional reinforcement ring to compensate for the sunroof aperture and maintain the body stiffness and strength."[34]

Mr. Grimes says that using a different roof structure did not skew the results of the test.[35] But he did not do anything to determine whether his statement is *true*. Mr. Grimes did not conduct any testing on differences in strength; he did not review any testing that others did on roof strength; he did not review any literature about the effect sunroofs have on structural strength; he did not review tests on the strength of any component materials; and he did not examine any design drawings of the roof components or consider the orientation of the component parts.[36]

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[33] *Id*. at 178:8-11; see also Ex. 6, Crosby Dep., at 94:25-95:3 ("Q: So you personally didn't do anything to make sure that the roof structures were the same, is that fair, you were relying on Mr. Grimes? A: Yes.").
[34] *See* Ex. 9, Roche Rebuttal Report, at BRYSON009387.
[35] *See* Ex. 2, Grimes Dep., at 231:23-232:21.
[36] *Id*.

Instead, he simply *says* Exponent's use of vehicles with different structural components did not change the results.

Because Exponent's crash test introduced several new variables at once, it is impossible to determine the precise effect of its use of a non-sunroof vehicle. However, a comparison of the post-impact subject Escape and test Escape indicates that the roof structures may have behaved differently in the crash test than in the subject collision. When comparing three-dimensional scans of the two vehicles, Mr. Roche observed that the crash test Escape exhibited significant roof bulging that was not present in the subject Escape.[37] Unlike in the Brysons' crash, the crash test bulging went all the way to the occupant space *in the front row* of the vehicle—past where the Bryson's son would have been seated.[38]

3. Exponent did not place cargo in the trunk of the Ford Escape, then attributed the test results to that change without any data or evidence to support its claim.

Despite all the variables Exponent added to the crash test that tend to increase intrusion, the results of the crash test *still* proved Plaintiffs' case—the second-row seat where C.Z.B. would have been sitting deformed significantly *less*

[37] *See* Ex. 9, Roche Supp. Report, at BRYSON009387.
[38] *Id.*

in the crash test than it did in the subject collision:[39]

Image 5: Rear Seat Comparison

Figure 1. The left vehicle is the interior of the Escape after it was rear-ended by the unlifted F250 in the May 2023 Exponent Crash Test. The right vehicle is the Brysons' Escape after the subject crash with the lifted F250.

This picture demonstrates that when the striking F250 is not equipped with a lift, there is plenty of survival space for a child in the second row. RC's experts blame this result they don't like on *yet another* variable Exponent changed in the crash test. Despite knowing the precise contents of the Bryson family's trunk at the time of the collision,[40] Exponent made the strategic choice to run the crash test without any cargo in the Escape's trunk.[41] RC now claims that ***if***

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[39] *See* Ex. 9, Roche Rebuttal Report, at BRYSON 009384. Mr. Grimes agrees the second-row seat deformed more in the subject collision than in the crash test. *See* Ex. 2, Grimes Dep., at 196:17-23 ("Q: Do you agree that the second-row seat Cohen was sitting in deformed farther forward in the subject collision than in the crash test? A: It certainly appears to have. Yes. Q: Did you quantify how much the second-row seat deformed statically in the subject collision? A: No.").

[40] Plaintiffs provided Rough Country with an itemized list of the trunk's contents in an Interrogatory response. *See* Ex. 12, Pls' Resp. to Rough Country's Second Interrogs., at No. 1.

[41] *See* Ex. 2, Grimes Dep., at 192:24-194:11.

Exponent had placed cargo in the test Escape's trunk, the second-row seat in the crash test Escape ***would have*** deformed the same as in the subject collision.[42] This testimony is pure ipse dixit. It is quite literally based on nothing.

Mr. Grimes claims "the difference in the seat deformation in both Escapes was probably due to the lack of cargo in the rear cargo area of the test Escape"[43]—cargo that he and Exponent *chose not to put there*. Mr. Grimes does not support that belief with any calculations, testing, or literature.[44] He did not measure the volume or strength of the cargo in the Brysons' trunk.[45] As a result, he reached the facially absurd conclusion that a garbage bag of clothes, a flimsy shop-vac (which was flattened in the crash), an umbrella stroller, and two folding camping chairs are stronger than the Escape's bolted-down second-row seat and *would have* displaced it far enough forward to match the subject collision.[46]

That opinion is precisely the sort of unsupported speculation prohibited by *Daubert*. *See United States v. Frazier*, 387 F.3d 1244, 1261 (11th Cir. 2004) ("The trial judge in *all* cases of proffered expert testimony must find that it is properly grounded, well-reasoned, and not speculative before it can be admitted.") (citing

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[42] *Id.* at 197:25-200:6.
[43] *See* Ex. 1, Grimes Report, at 33.
[44] *See* Ex. 2, Grimes Dep., at 198:4-201:4.
[45] *Id.*
[46] *Id.*

Fed. R. Evid. 702) (emphasis in original).

RC's experts intentionally changed a variable (the presence of cargo in the trunk), and then based their core opinions on what they claim, without any evidence, would have happened if they hadn't changed that variable. As Mr. Buchner noted, Mr. Grimes' "apparent reliance on the concept that the cargo is so significant that it can affect crash test results is contradictory to his decision to intentionally omit the cargo from the test. It if is significant, then it must be included in the test."[47]

4. Exponent's crash test did not account for Mr. Elliott's pre-impact braking.

The black box data from the subject collision show that Mr. Elliott applied the brakes in the last half-second before impact.[48] Mr. Grimes admits Mr. Elliott's braking could have slowed the subject F-250 by as much as 7.7 miles per hour

[47] *See* Ex. 4, Buchner Rebuttal Report, at 4.
[48] *See* Ex. 2, Grimes Dep., at 147:19-23 ("Q: So the braking we're talking about is that the CDR indicates that Mr. Elliott applied his brakes sometime in the last .5 seconds before impact, correct? A: Yes.").

before impact.[49] Yet Exponent ran the crash test with an impact speed of 49.9 mph without accounting for braking *at all*.[50]

As RC knows, increasing the speed increases the severity of the crash and level of intrusion. An F-250 impacting at 43.9 miles per hour "has only 77% of the energy available to damage an Escape compared to an F-250 impact at 49.9 mph."[51] This is yet another example of Exponent biasing the results in its own favor.[52]

5. The dissimilarities between Exponent's crash test and the subject collision warrant exclusion under *Daubert*'s "fit" requirement.

The admissibility of crash test evidence requires "a foundational showing of a substantial similarity between the test results being offered into evidence and the

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[49] *See* Ex. 13, Grimes CDR Analysis Chart, at 3 ("Speed at Impact" Chart); *see also* Ex. 2, Grimes Dep., at 149:15-22 ("Q: So that estimates that given a half second of braking and .7 Gs of braking, the speed would have been reduced by 7.7 miles per hour; is that right? A: It could have been at the maximum. Yes, sir. Q: And that reduction of speed wasn't applied to the crash test; is that correct? A: It was not. No.").

[50] Ex. 2, Grimes Dep., at 150:5-7 ("Q: There was no braking before the F-250 hit the Escape in the crash test, correct? A: That's correct."); *see also* Ex. 5, Exponent Crash Test Report, at 4 ("Test Description").

[51] *See* Ex. 4, Buchner Rebuttal Report, at 3.

[52] In contrast, Plaintiffs' expert Mr. Buchner calculated a speed estimate (51 mph) that included the assumption that Mr. Elliott *did not* hit the brakes in the 0.5 seconds before the wreck—an assumption that is *un*favorable to Plaintiffs. Mr. Grimes, however, admits that Mr. Elliott *did* hit the brakes, but conducted the crash test with no breaks, and assumption that is *favorable* to Defendant.

circumstances of the accident at issue in the litigation." *Riley v. Tesla, Inc.*, 603 F.Supp.3d 1259, 1279 (S.D. Fla. 2022); *see also Jones v. Ralls*, 187 F.3d 848, 852 (8th Cir. 1999) (same). In the context of a crash test, that "substantial similarity" standard is exacting—it requires that the crash test "be so nearly the same in substantial particulars as to afford a fair comparison in respect to the particular to which the test is directed." *Burchfield*, 636 F.3d at 1337; *Barnes*, 547 F.2d at 277 (same). Exponent's crash test does not even *approach* having the "substantial particulars" to allow a valid analysis of how much RC's lift kit affected the amount of intrusion—because Exponent also changed the amount of offset between the vehicles, the speed of the F-250, the structure of the Ford Escape, and the presence of cargo in the Escape's trunk. RC's experts *admit* that each of those variables could affect intrusion and that they do not know what role they played in the crash test results.

Mr. Buchner articulated why Exponent's crash test does not have a "substantial similarity" to the subject collision that could allow any scientifically valid analysis—the test introduced too many confounding variables:

> Because Grimes cannot state that he has two tests where the only differing variable is the presence or non-presence of the lift kit, due to the extensive differences between the crash test and the subject collision, **all [Mr. Grimes] can reasonably conclude is that the combination of possible differing speeds, offsets, lift kits, sunroofs, and weights**

> **composed the differences *but he cannot state which has more or less effect.***[53]

The unreliability of Exponent's crash test boils down to basic science: "to state the effect of changing one variable (the presence vs. non-presence of a lift kit) only the lift kit variable can change in the two tests."[54]

Courts interpreting the "substantial similarity" requirement exclude experiments and tests where—as here—the test introduces multiple variables while purporting to study only one. In *Burchfield*, the Eleventh Circuit reversed the admission of a videotaped test of a train's handbrake due to a lack of "substantial similarity" to the incident it purported to study. 636 F.3d at 1332. Despite the defendant's test using the same rail car, the same load, and the same mechanical condition as the incident, the Court reversed its admission because it introduced an additional variable: the expert did not know whether the handbrake was "torqued to higher than a normal human being can do." *Id.* at 1337. The *Burchfield* court reversed the admission of a test because it potentially added *one* new variable. RC's crash test added at least four.

The *Burchfield* court is not alone—other courts have repeatedly excluded tests that fail to meet the "substantial similarity" requirement due to the presence of

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[53] *See* Ex. 4, Buchner Rebuttal Report, at 3.
[54] *Id.*; *see also* Ex. 14, Roche Rebuttal Dep., at 91:2-25.

confounding variables. *See, e.g., United States v. Gaskell*, 985 F.2d 1056, 1060 (11th Cir. 1993) (reversing admission of demonstrative of a shaken infant using a doll with a non-biofidelic neck); *Gladhill v. Gen. Motors Corp.*, 743 F.2d 1049, 1051 (4th Cir. 1984) (reversing admission of a brake test performed on straight, flat asphalt instead of a downward sloping road with a curve); *Hall v. Gen. Motors Corp.*, 647 F.2d 175, 180-81 (D.C. Cir. 1980) (excluding test where the driveshaft was taped instead of bolted and the car was pushed instead of driven to the required speed).

RC bears the burden of demonstrating the Exponent crash test meets the "substantial similarity" requirement. *Barnes*, 547 F.2d at 277. By introducing four new variables—each of which creates a bias in favor of the outcome that RC wanted—Exponent made it impossible for RC's experts to reach any reliable conclusions about the lift kit's effect on vehicle intrusion.

B. Because Exponent's dissimilar crash test poses a significant risk of confusing the jury, it must be excluded under Rule 403.

Testimony from RC's experts drawing conclusions from Exponent's inapplicable crash test introduces "the danger of misleading the members of the jury who may attach exaggerated significance to the test." *Barnes*, 547 F.2d at 277 (citation omitted). "The more troublesome cases . . . are ones like this one where

some principles of some kind may be demonstrated but in a fashion that looks very much like a recreation of the event that gave rise to the trial." *Muth*, 461 F.3d at 566. By eliciting testimony from a parade of experts who dismiss away (or ignore altogether) the confounding effects of the crash test's offset, speeds, braking, sunroof, and cargo on its results, RC aims to confuse the jury by leading it to attach outsized significance to inherently flawed results. That is precisely the sort of testimony that warrants exclusion under Rule 403. *See* Fed. R. Evid. 403.

When expert testimony "is based upon the results of tests which were conducted under such different circumstances than those obtaining at the time of the accident complained of so as to make the results largely irrelevant, if not misleading, that testimony must be excluded." *Tunnell v. Ford Motor Co.*, 330 F.Supp.2d 731, 746 (W.D. Va. 2004) (citing *Gladhill v. General Motors Corp.*, 743 F.2d 1049, 1051 (4th Cir. 1984)) (cleaned up). Exponent's crash test must be excluded because it introduces an unjustifiable danger of misleading the jury.

C. Grimes' Sur-Rebuttal Report does not make the Exponent test substantially similar to the subject crash.

RC realizes that its crash test is not admissible. It therefore had Mr. Grimes issue a sur-rebuttal report to try to save it. The core conclusion in Mr. Grimes' sur-rebuttal report is that the crash test's lateral offset was "near the exemplar lineup

impact location."[55] Plaintiffs have moved this Court to strike that report because it grossly violates the Court's scheduling order. But even if the Court considered the report, it still would not alter the outcome of this motion.

First, the sur-rebuttal does not address the differences in speed, braking, structural characteristics, and cargo between the crash test and the subject collision. Even assuming the truth and validity of every conclusion in Mr. Grimes' sur-rebuttal report, RC's crash test must be excluded because it fails the "substantial similarity" test.

Second, the only reason RC *can* fudge its new measurements about the amount of offset is because it failed to properly record the amount of offset in the crash test. As discussed above, Exponent could have used a marker pin so that the amount of offset was clearly measurable and transparent. Instead, it conducted the test without a marker pin. None of RC's experts made a single measurement of the offset—until six months after they received Mr. Buchner and Mr. Roche's reports identifying the offset dissimilarity. RC is using its failure to conduct a proper test as a basis to create evidence in its favor.

Third, even a cursory review of the sur-rebuttal report demonstrates that it contains junk science. For example, Mr. Grimes claims he used the Ford logo

[55] *See* Ex. 15, Grimes Sur-Rebuttal, at 24, ¶ 15.

imprint to measure the offset. The outside of the Ford emblem can be clearly seen on the Brysons' Escape, and it is right above the "s" where the word "Escape" appears on the vehicle. Mr. Grimes, however, simply superimposed the logo in a different place, roughly over the "a."

Fig. 1. On the left, the imprint of the Ford emblem oval is seen in the red circle over the "s." On the right, it is clear Mr. Grimes superimposed the emblem far to right of the imprint.

RC and Exponent could have conducted a crash test that was substantially similar to the collision. Instead, they chose to manipulate variables in RC's favor. As a result, the test must be excluded.

IV. CONCLUSION

For the reasons above, Plaintiffs ask the Court to exclude Exponent's crash test in its entirety and prevent RC's experts from testifying about it or using it to support their opinions.

Signature on the Following Page

Respectfully submitted on January 15, 2025,

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CERTIFICATE OF COMPLIANCE

Pursuant to Local Rules 5.1(B) and 7.1(D), I hereby certify that the foregoing filing complies with the applicable font and size requirements and is formatted in 14-point Times New Roman font.

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CERTIFICATE OF SERVICE

I hereby certify that the foregoing *DAUBERT MOTION TO EXCLUDE DEFENDANT'S UNRELIABLE CRASH TEST* was electronically filed with the Clerk of Court via CM/ECF, which will automatically serve the following attorneys of record:

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This 15th day of January, 2025.

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